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PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Substitute for form 14498/PTO

**SUPPLEMENTAL
INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	09/638,485
Filing Date	August 14, 2000
First Named Inventor	JACOBUS, Charles J.
Art Unit	2837
Examiner Name	SMITH, Tyrone W.
Attorney Docket Number	IMM069D

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/MS/	1	6,219,034	4/17/01	Elbing, et al.	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
/MS/	2	JP	01-003664		7/19/1990	Taito Corporation	✓
↓	3	JP	02-109714		1/13/1992	Epoch Co. and Key- Planning Co.	✓
↓	4	JP	05-193862		1/27/1995	Sega Corporation	✓
/MS/	5	JP	04-007371		8/3/1993	Taito Corporation	✓

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
/MS/	6	SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994.

Examiner
Signature

/Mansour Said/

Date
Considered

05/29/2007

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	09/638,485
				Filing Date	August 14, 2000
				First Named Inventor	Charles J. JACOBUS
				Group Art Unit	2837
				Examiner Name	Tyrone W. Smith
Sheet	1	of	5	Attorney Docket Number	IMM069D

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		Number Kind Code ² (if known)			
/MS/	AA	3,220,121	11/30/1985	Cutler	
	AB	3,517,448	8/30/1970	Corlyon et al.	
	AC	3,903,614	9/9/1975	Diamond et al.	
	AD	4,238,325	10/2/1980	Hall et al.	
	AE	4,513,235	4/23/1985	Acklam et al.	
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	AK	5,022,407	6/11/1991	Horch et al.	
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	AX	5,038,089	8/6/1991	Szakaly	
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	BB	5,334,027	8/2/1994	Wherlock	
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	BH	6,422,941	7/23/2002	Thomer et al.	
	/MS/	6,111,577	8/29/2000	Zilles et al.	

Examiner Signature	/Mansour Said/	Date Considered	05/29/2007
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² Applicant's unique citation designation number (optional). ³ Kinds of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ⁴ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁵ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁶ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁷ Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	09/638,485
				Filing Date	August 14, 2000
				First Named Inventor	Charles J. JACOBUS
				Group Art Unit	2837
				Examiner Name	Tyrone W. Smith
Sheet	2	of	5	Attorney Docket Number	IMM069D

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ²	Number ³	Kind Code ⁴ (if known)			
/MS/	BI	EP	EP0349088		1/31/1990	Visser	

Examiner Signature	/Mansour Said/	Date Considered	05/29/2007
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**INFORMATION DISCLOSURE
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Sheet 3 of 5

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Application Number	09/638,485
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Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
/MS/	BJ	BAIGRIE, "Electric Control Loading – A Low Cost, High Performance Alternative," Proceedings, pp. 247-254, November 8-8, 1990.
	BK	IWATA, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp 287-292, 1993.
	BL	RUSSO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives 08/14/1990, pp. 1-131, May 1990.
	BM	BROOKS et al., "Hand Controllers for Teleoperation – A State-of-the-Art Technology Survey and Evaluation," JPL Publication 85-11; NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985.
	BN	JONES et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); Experimental Brain Research, Vol. 79, No. 1, pp. 150-158, 1990.
	BO	BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993.
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	BQ	OUH-YOUNG, "Force Display in Molecular Docking," Order No. 9034744, p. 1-369, 1990.
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	BS	CALDWELL et al., "Enhanced Tactile Feedback (Tele-Traction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.
	BT	ADELSTEIN, "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, Advances in Robotics, Edited by H. Kazerooni, pp. 1-12, 1992.
	BU	GOTOW et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337
✓	BV	STANLEY et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSV-Vol. 42, Advances in Robotics, pp. 55-61, ASME 1992.
/MS/	BW	RUSSO, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, Advances in Robotics, pp. 63-70, ASME 1992.

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**INFORMATION DISCLOSURE
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(use as many sheets as necessary)

Sheet 4

of

5

Complete if Known

Application Number	09/638,485
Filing Date	August 14, 2000
First Named Inventor	Charles J. JACOBUS
Group Art Unit	2837
Examiner Name	Tyrone W. Smith
Attorney Docket Number	IMM069D

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
/MS/	BX	KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," Telemanipulator Technology and Space Telerobotics, Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993.
	BY	PATRICK et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," Cooperative Intelligent Robotics In Space, Rui J. deFigueiredo et al., Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990.
	BZ	ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," Ph.D. Dissertation, Dept. of Mechanical Engineering, MIT, June 1989.
	CA	BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," Science, Vol. 208, No. 4450, pp. 1327-1335, 1980.
	CB	BEJCZY, "Generalization of Bilateral Force-Reflecting Control of Manipulators," Proceedings Of Fourth CISM-IFTOMM, Sep. 8-12, 1981.
	CC	MCAFFEE, "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," JPL D-5172, pp. 1-50, A1-A36, B1-B5, C1-C36, January 1988.
	CD	MINSKY, "Computational Haptics: The Sandpaper System for Synthesizing Textures for a Force-Feedback Display," Ph.D. Dissertation, MIT, June 1995.
	CE	JACOBSEN et al., "High Performance, Dexterous Telerobotic Manipulator With Force Reflection," Intervention/ROV '91 Conference & Exposition, Hollywood, Florida, May 21-23, 1991.
	CF	SHIMOGA, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration, Rensselaer Polytechnic Institute, Sep. 30 - Oct. 1, 1992.
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	CH	TERRY et al., "Tactile Feedback In A Computer Mouse," Proceedings of Fourteenth Annual Northeast Bioengineering Conference, University of New Hampshire, March 10-11, 1988.
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↓	CJ	EBERHARDT et al., "OMAR – A Haptic display for speech perception by deaf and def-blind individuals," IEEE Virtual Reality Annual International Symposium, Seattle, WA, Sep. 18-22, 1993.
/MS/	CK	RABINOWITZ et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contour area," Journal of The Acoustical Society of America, Vol. 82, No. 4, October 1987.

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Sheet	5	of	5	Attorney Docket Number	IMM069D

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/MS/	CL	BEJCZY et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," International Computer Technology Conference, The American Society of Mechanical Engineers, San Francisco, CA, August 12-15, 1980.	
	CM	BEJCZY et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," SOAR '89 Workshop, JSC, Houston, TX, July 25-27, 1989.	
	CN	OUH-YOUNG, "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," IEEE Transactions on Consumer Electronics, Vol. 41, No. 3, August 1995.	
	CO	MARCUS, "Touch Feedback in Surgery," Proceedings of Virtual Reality and Medicine The Cutting Edge, Sep. 8-11, 1994.	
	CP	BEJCZY, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987.	
	CQ	AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-838151-82-7, pp. 129-180, 1992.	
	CR	EBERHARDT et al., "Including Dynamic Haptic Perception by The Hand: System Description and Some Results," DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1, ASME 1994.	
	CS	GOBEL et al., "Tactile Feedback Applied to Computer Mice," International Journal of Human-Computer Interaction, Vol. 7, No. 1, pp. 1-24, 1995.	
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	CU	"Cyberman Technical Specification," Logitech Cyberman SWIFT Supplement, 4/5/1994.	
↓	CV	OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95, Seoul, Korea, 21-24 August 1995.	
/MS/	CW	KACZMAREK et al., "Tactile Displays," Virtual Environment Technologies.	

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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.:	Application No.:
	IMM1P069D	09/638,485
	Applicant:	
	Schuler et al.	
	Filing Date:	Group:
	8/14/00	2837

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
/MS/	A	4,937,685	6/26/90	Barker et al.	360	14.1	12/2/83
↓	B	4,964,004	10/16/90	Barker	360	14.1	6/16/89
↓	C	4,983,901	1/8/91	Lehmer	318	685	4/21/89
↓	D	5,076,517	12/31/91	Ferranti et al.	244	228	8/14/89
↓	E	5,184,319	2/2/93	Kramer	364	806	2/2/90
↓	F	5,286,203	2/15/94	Fuller et al.	434	45	10/7/92
↓	G	5,354,162	10/11/94	Burdea et al.	414	5	8/31/92
↓	H	5,428,748	6/27/95	Davidson et al.	395	275	9/24/92
↓	I	5,634,794	6/3/97	Hildreth et al.	434	37	3/23/95
↓	J	5,742,278	4/21/98	Chen et al.	345	156	11/1/95
/MS/	K	5,781,172	7/14/98	Engel et al.	345	164	6/16/97

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
/MS/	L	0085518	10.08.83	EPO			X	
↓	M	0111992	27.06.84	EPO			X	
↓	N	0349086	03.01.90	EPO			X	
↓	O	2235310	27.02.91	GB			X	
/MS/	P	0326439	2.8.89	EPO				

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
/MS/	R	Flight Simulation, Rolfe, J.M. and Staples, K. J., eds., 1986.
	S	
	T	
Examiner /Mansour Said/		Date Considered 05/29/2007

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/MS/	A	5,999,168	12/7/99	Rosenberg et al.	345	161	2/21/97
/MS/	B	6,088,017	7/11/00	Tremblay et al.	345	156	4/24/98
	C						
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

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							Yes	No
/MS/	L	95/20788	3.8.95	PCT			X	
	M	0626634	30.11.94	EPO			X	
	N	H6-210065	2.8.94	Japan			X	
	O	H4-92691	25.3.92	Japan			X	
/MS/	P	H5-86387	22.11.93	Japan			X	

Other Documents

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	R	
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	A						
	B						
	C						
	D						
	E						
	F						
	G						
	H						
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	J						
	K						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
/MS/	L	S62-194389	10.12.87	Japan			X	
↓	M	0607580	27.7.94	EPO			X	
	N	92/00559	9.1.92	PCT			X	
	O	JP4092691	25.3.92	Japan			X	
/MS/	P	JP7024147	27.1.95	Japan			X	

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
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Examiner /Mansour Said/		Date Considered 05/29/2007

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.:	Application No.:
	IMM1P069D	09/638,485
	Applicant:	
	Schuler et al.	
	Filing Date:	Group:
	8/14/00	2837

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub- class	Filing Date
	A						
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub- class	Translation	
							Yes	No
/MS/	L	JP4008381	13.1.92	Japan			X	
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
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Examiner		Date Considered
/Mansour Said/		05/29/2007

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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.:	Application No.:
	IMM-00607/03	09/638,485
	Applicant:	
	Jacobus et al.	
Filing Date:	Group:	
8/14/00	2837	

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Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
/MS/	A	3,919,691	11/11/75	Noll	340	172.5	5/26/71
	B	4,436,188	03/13/84	Jones	188	378	11/18/81
	C	4,603,284	7/29/86	Perzley	318	568	6/5/84
	D	4,604,016	8/5/86	Joyce	414	7	8/3/83
	E	4,775,289	10/4/88	Kazerooni	414	735	9/25/87
	F	4,795,296	1/3/89	Jau	414	5	11/17/86
	G	4,800,721	01/31/89	Cemenska et al.	60	393	2/13/87
	H	4,861,269	8/29/89	Meenan, Jr.	434	45	03/30/88
	I	4,925,312	5/15/90	Onaga et al.	364	513	3/21/88
	J	4,949,119	8/14/90	Moncrief et al.	364	578	1/12/89
/MS/	K	5,007,300	4/16/91	Siva	74	471 XY	1/22/90

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Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
/MS/	L	WO9532459	30 Nov 95	PCT			X	
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Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
/MS/	R	Ellis, et al., "Design and Evaluation of a High-Performance Prototype Planar Haptic Interface", DSC-Vol. 49, Advances in Robotics, Mechatronics, and Haptic Interfaces ASME 1993.
/MS/	S	Schmult, "Application Areas for a Force-Feedback Joystick", Department of Machine Perception Research AT&T Bell Laboratories, Holmdel, New Jersey, DSC-Vol 49, Interfaces ASME 1993.
/MS/	T	Adelstein, et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control Research", Steling Software Aerospace Human Factors Research Division, NASA-Ames, Moffett Field, CA, 1992.
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	Applicant:	
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	Filing Date:	Group:
	8/14/00	2837

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Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
/MS/	A	5,044,956	09/03/91	Behensky et al.	434	45	1/12/89
	B	5,065,145	11/12/91	Purcell	340	706	10/6/89
	C	5,103,404	4/7/92	McIntosh	318	568.22	12/20/89
	D	5,107,080	4/21/92	Rosen	200	6A	12/1/89
	E	5,116,180	5/26/92	Fung et al.	414	5	5/3/90
	F	5,146,566	9/8/92	Hollis, Jr.	395	275	05/29/91
	G	5,156,363	10/20/92	Cizewski et al.	244	223	2/28/91
	H	5,185,561	2/9/93	Good et al.	318	432	7/23/91
	I	5,193,963	3/16/93	McAfee et al.	414	5	10/31/90
	J	5,197,003	3/23/93	Moncrief et al.	364	410	4/7/92
/MS/	K	5,203,563	4/20/93	Loper, III	273	148	3/21/91

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
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Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
/MS/	R	Hiroo Iwata, "Pen-based Haptic Virtual Environment", Institute of Engineering Mechanics, University of Tsukuba, Tsukuba, 305 JAPAN
/MS/	S	Batter, et al., "Grove-1: A Computer Display to the Sense of Feel", University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA
/MS/	T	Minsky, et al., "Feeling and Seeing: Issues in Force Display", Department of Computer Science, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599, 1990 ACM.
Examiner: /Mansour Said/		Date Considered 05/29/2007.

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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.:	Serial No.:
	IMM-00607/03	09/638,485
	Applicant:	
	Jacobus et al.	
	Filing Date:	Group:
	8/14/00	2837

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/MS/	A	5,223,776	6/29/93	Radke et al.	318	568.1	12/31/90
	B	5,228,356	7/20/93	Chuang	74	471	11/25/91
	C	5,264,768	11/23/93	Gregory et al.	318	561	10/6/92
	D	5,275,565	2/23/93	Moncrief	434	29	2/23/93
	E	5,381,080	1/10/95	Schnell et al.	318	566	2/18/93
	F	5,414,337	5/9/95	Schuler	318	561	6/11/93
	G	5,459,382	10/17/95	Jacobus et al.	318	568.11	6/9/94
	H	5,513,100	4/30/96	Parker et al.	364	167.01	6/10/93
	I	5,576,727	11/19/96	Rosenberg et al.	345	179	6/5/95
	J	5,577,981	11/26/96	Jarvik	482	4	8/4/95
/MS/	K	5,587,937	12/24/96	Massie et al.	364	578	4/25/95

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/MS/	R	Russo, "The Design and Implementation of a Three Degree-of-Freedom Force Output Joystick", Submitted to the Department of Mechanical Engineering on May 11, 1990.
/MS/	S	Rosenberg, Louis B., "Perceptual Design of a Virtual Rigid Surface Contact," Center for Design Research Stanford University, Air Force Material Command, April 1993, pp. 1-41.
/MS/	T	Atkinson, William D. et al, "Computing with Feeling," Comput. & Graphics, Vol. 2, No. 2-E, pp. 97-103.
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	Applicant:	
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	Filing Date:	Group:
	8/14/00	2837

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Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub- class	Filing Date
/MS/	A	5,589,828	12/31/96	Armstrong	341	20	3/5/92
	B	5,589,854	12/31/96	Tsai	345	161	6/22/95
	C	5,625,576	4/29/97	Massie et al.	364	578	10/1/93
	D	5,642,469	6/24/97	Hannaford	395	99	11/3/94
	E	5,643,087	7/1/97	Marcus et al.	463	38	7/29/94
	F	5,709,219	01/20/98	Chen et al.	128	782	08/01/96
	G	5,721,566	2/24/98	Rosenberg et al.	345	161	6/9/95
	H	5,731,804	3/24/98	Rosenberg	345	156	1/18/95
	I	5,734,373	3/31/98	Rosenberg et al.	345	161	12/1/95
	J	5,767,839	6/16/98	Rosenberg	345	161	3/3/95
/MS/	K	5,769,640	7/23/98	Jacobus et al.	434	262	8/10/95

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Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub- class	Translation	
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/MS/	S	Hannaford, B. et al., "Performance Evaluation of a Six-Axis Generalized Force-Reflecting Teleoperator," IEEE Transactions on Systems, Man, and Cybernetics, 1991.
/MS/	T	Howe, R. et al., "Task Performance with a Dextrous Teleoperated Hand System," Proceedings of SPIE, Vol. 1833, Nov. 1992.
Examiner	/Mansour Said/	
	Date Considered	05/29/2007

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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.:	Application No.:
	IMM-00607/03	09/638,485
	Applicant:	
	Jacobus et al.	
	Filing Date:	Group:
	8/14/00	2837

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
/MS/	A	5,790,108	8/4/98	Salcudean et al.	345	184	10/23/92
/MS/	B	5,889,670	3/30/99	Schuler et al.	364	186	6/11/96
/MS/	C	5,889,672	3/30/99	Schuler et al.	364	188	6/3/98
	D						
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
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/MS/	R	Kelley, A.J. et al., "MagicMouse: Tactile and Kinesthetic Feedback in the Human-Computer Interface using an Electromagnetically Actuated Input/Output Device," Dept. of Elec. Engineering, Univ. of British Columbia, 1993, pp. 1-27.
/MS/	S	Iwata, H., "Artificial Reality with Force-feedback: Development of Desktop Virtual Space with Compact Master Manipulator," Computer Graphics, Vol. 24, No. 4, 1990, pp. 165-170.
/MS/	T	Hayward, Vincent et al. "Design and Multi-Objective Optimization of a Linkage for a Haptic Interface," Advances in Robot Kinematics and Computationed Geometry, Kluwer Academic Publishers, 1994, pp. 359-368.
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Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Att'y Docket No.: IMM-00607/03	Application No.: 09/638,485
	Applicant: Jacobus et al.	
	Filing Date: 8/14/00	Group: 2837

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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/MS/	R	Bostrom, M. et al., "Design of An Interactive Lumbar Puncture Simulator With Tactile Feedback," IEEE 0-7803-1363, 1993, pp. 280-286.
/MS/	S	Ramstein, Christophe, "The Pantograph: A Large Workspace Haptic Device for a Multimodal Human-Computer Interaction", Computer-Human Interaction, CHI 1994.
/MS/	T	Hirota, Koichi, "Development of Surface Display," IEEE 0-7803-1363, 1993, pp. 256-262.
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Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.:	Application No.:
	IMM-00607/03	09/638,485
	Applicant:	
	Jacobus et al.	
	Filing Date:	Group:
	8/14/00	2837

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
/MS/	R	Millman, P. et al., "Design of a Four Degree-of-Freedom Force-Reflecting Manipulandum with a Specified Force/Torque Workspace," IEEE Int'l Conf. on Robotics and Automation, IEEE CH2969-4, 1991, pp. 1488-1493.
/MS/	S	Jones, L.A. et al., "A Perceptual Analysis of Stiffness," Experimental Brain Research 1990, pp. 151-156.
/MS/	T	Kotoku, Tetsuo, "A Predictive Display with Force Feedback and its Application to Remote Manipulation System with Transmission Time Display," IEEE 1992, July 7-10, 1992, pp. 239-246.
Examiner /Mansour Said/		Date Considered 05/29/2007

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	IMM-00607/03	09/638,485
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U.S. Patent Documents

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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
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	Applicant:	
	Schuler et al.	
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	8/14/00	2837

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
/MS/	A	4,538,035	8/27/95	Pool	200	6A	10/13/83
	B	5,113,179	5/12/92	Scott-Jackson	340	709	3/16/90
	C	5,209,661	5/93	Hildreth et al.	434	45	10/29/90
	D	5,220,260	6/15/93	Schuler	318	561	10/24/91
	E	5,366,376	11/22/94	Copperman et al.	434	69	5/22/92
	F	5,368,484	11/29/84	Copperman et al.	434	69	2/17/93
	G	5,435,729	7/95	Hildreth et al.	434	365	3/19/93
	H	5,559,432	9/24/96	Logue	324	207.17	6/29/94
	I	5,701,140	12/23/97	Rosenberg et al.	345	156	7/12/94
	J	5,739,811	4/14/98	Rosenberg et al.	345	161	9/27/95
/MS/	K	5,880,714	3/9/99	Rosenberg et al.	345	156	1/15/97

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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/MS/	R	Rutherford, M. "Third Generation Digital Flight Controls," CAE Electronics, Ltd., The Royal Aeronautical Society, 1984 Spring Convention Future Applications and Prospects for Flight Simulation, May 9-10, 1984, paper number 15.
/MS/	S	De Vries, L. and Wierda, G. J., "Performance Considerations, Design Criteria and Realization of a Digital Control Loading System," International Air Transport Association, Seventh Flight Simulator Technical Sub-Committee Meeting, Agenda Item 10, Montreal, Sept. 17-20, 1984.
/MS/	T	Baradat, Jean and Lacroix, Michel, "Advanced Features in Control Loading and Motion Systems for Simulators," National Security Industrial Association 1 st Interservice/Industry Training Equipment Conference Proceedings, Nov. 27-29, 1981.
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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
/MS/	A	6,057,828	5/2/00	Rosenberg et al.	345	156	1/16/97
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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/MS/	R	Norlin, Ken A., "Flight Simulation Software at NASA Dryden Flight Research Center," American Institute of Aeronautics and Astronautic's Flight Simulation Technologies Conference, Baltimore, MD, August 7-10, 1995.
/MS/	S	Corrao, Joseph M., "Control Loading," American Institute of Aeronautics and Astronautic's Flight Simulation Update 1987, Jan. 12-16, 1987
/MS/	T	Corrao, J.M., "Control Loading," American Institute of Aeronautics and Astronautic's Flight Simulation Update 1988, Jan. 11-15, 1988.
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Foreign Patent or Published Foreign Patent Application

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/MS/	S	Hildreth, Bruce L., Eyermann, Roger E. and Trankle, Thomas Dr., "DC Servo-Motors for High Performance High Reliability Control Loading in Flight Simulators," American Defense Preparedness Association 12 th Interservice/Industry Training System Conference, Nov. 6-8, 1990.
/MS/	T	Baigrie, Stephen A., Reflectone Inc., "Electric Control Loading - A Low Cost, High Performance Alternative," American Defense Preparedness Association 12 th Interservice/Industry Training System Conference, Nov. 6-8, 1990.
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U.S. Patent Documents

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/MS/	T	Flight Simulation, Rolfe, J.M. and Staples, K. J., eds., 1986.
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	IMM-00607/03	09/638,485
	Applicant:	
	Schuler et al.	
	Filing Date:	Group:
	8/14/00	2837

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	A						
	B						
	C						
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	L							
	M							
	N							
	O							
	P							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
/MS/	R	Albers, F. Gerry, "Microcomputer Base for Control Loading," Naval Training Equipment Center 11 th NTEC-Industry Conference Proceedings, NAVTRAEQUIPCEN IH-306, Nov. 14-16, 1978.
	S	
	T	
Examiner	/Mansour Said/	
	Date Considered	05/29/2007

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.